

CURRY COLLEGE

Location: Milton, MA

Project Type: Higher Education

Service: Ground Improvement

Technique: Geopier SRT® Elements



HELICAL



GEOTECHNICAL CHALLENGES

- Slope Instability
- Difficult access
- Low Vibration Construction
- Work Adjacent to Existing Structure

INTRODUCTION

Curry College is situated on a 131-acre campus in Milton, Massachusetts. A campus revitalization project contained several site improvements, including a steepened 1.2H:1V slope located in a limited-access area.

GEOTECHNICAL CHALLENGES

The slope geometry (and associated construction access) was limited as the top of the proposed slope was located at the base of an existing residential structure and the bottom of the slope was within 10 feet of an existing residence hall building. and an unstable underlain by dense The project team identified the potential for slope instability of the 16-foot-tall, 1.2H:1V slope. Stability analyses performed by the geotechnical engineer indicated factors of safety against slope failure of approximately 1.0 under static loading and 0.85 under seismic conditions. The failure surface was estimated at approximately 10 feet below grade.

DESIGN AND CONSTRUCTION SOLUTION

The design team evaluated a number of slope stabilization solutions, including: 1) the installation of a retaining wall to support a flatter vegetated slope and 2) Geopier SRT® elements with a 1.2H:1V vegetated slope. The Geopier SRT option proved to be the most cost-effective geotechnical solution to address the slope stabilization challenges on the project's constrained site. The final SRT design provided factors of safety against slope failure of 1.5 under static loading and 1.2 under seismic conditions.

The SRT solution allowed for the creation of an aesthetically appealing, landscaped slope, which was pleasing to the Owner who desired a polished finish. Furthermore, the solution did not require a backfill drainage system and could meet an aggressive seven-day installation schedule.

- Substantial cost savings compared to the retaining wall option
- Provided an aesthetically appealing, landscaped slope
- Solution could be implemented on a constrained site
- Fast installation

Helical installed approximately 100 Geopier SRT elements on a temporary 1.4H:1V slope using a Tramac 900 hydraulic breaker hammer mounted on a CAT-320 tracked excavator. Installation was completed in less than seven days and finish grading and seeding the final 1.2H:1V slope was completed by the site contractor immediately thereafter. A Helical quality control person was on-site throughout the geotechnical construction process to monitor installation procedures.

PROJECT DETAILS

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